PUBLIC SAFETY
PSWN PROGRAM
WIRELESS NETWORK

Saving Lives and Property Through Improved Interoperability

Special Assignment Technical Report—

Emergency Preparedness for Government

FINAL

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

On March 13–15, 2002, a conference, entitled "The Emergency Preparedness for Government Conference," was held at the DoubleTree Hotel in Atlanta, Georgia. The 3-day conference consisted of a variety of sessions and workshops of concern to those involved in emergency management. The key findings and recommendations resulting from the conference include—

- Due to the events of September 11, 2002, emergency managers and response agencies are reevaluating their emergency management plans based on the new threats. The Public Safety Wireless Network (PSWN) Program may offer to assist local, state, and federal entities that are attempting to include interoperable wireless communications in their emergency management plans.

- Maricopa County, Arizona has successfully developed partnerships between a variety of public and private organizations establishing comprehensive emergency management plans. The best practices developed in the State of Arizona may be of interest to the PSWN Program.

- The post-September 11, 2002 recovery efforts in New York used wireless communications to reestablish voice and data connectivity.

- Increasingly, hospitals are developing emergency management plans because they are often placed in the role of first responder during major disasters. The PSWN Program should ensure that the medical community is included in assessment efforts and plans for interoperable communications systems.

1. INTRODUCTION

The Emergency Preparedness for Government conference was held on March 13–15, 2002, in Atlanta, Georgia. The Advanced Learning Institute of Chicago, Illinois presented this government interest conference. The National Emergency Management Association (NEMA) chaired the conference. NEMA is a professional association of state, pacific, and Caribbean insular state emergency management directors. Bronner Group Consulting of Chicago, Illinois, sponsored the conference. The Bronner Group is a professional services company specializing in management and technical consulting services to all levels of government. Attendance was limited, with most attendees representing federal or state emergency management organizations or the military services. The topics were presented in an interactive forum by a variety of subject matter experts from local, state, and federal agencies.

Public Safety Wireless Network (PSWN) Program support staff attended the conference. The 2-day conference provided topical presentations and discussion sessions regarding emergency management activities that are ongoing in several areas of the Nation. Many of the presentations focused on the events of September 11, 2001, and their impact on emergency management planning, mitigation, and response. Several of the presentations also discussed newly identified potential threats facing local, state, and federal emergency management authorities. Unfortunately, one of the primary sessions originally advertised and of specific interest to the PSWN Program was cancelled: "Using Communications and Coordination to Ensure a Comprehensive Response Plan." The presenter, Cortez Trotter of the Chicago Office of Emergency Communications was unavoidably engaged in two serious emergency management incidents within the City of Chicago. This report consists of summaries for each of the nine sessions attended by the PSWN Program support staff.

2. DAY ONE

On the first day of the conference, PSWN Program support staff attended the following sessions—

- Building a New Emergency Management Readiness Algorithm
- Statewide Planning for Domestic Terrorism
- Disaster Assistance & Mitigation: Creating Safer, More Disaster Resilient Communities in Ontario
- Improving Collaboration: A Proven Measure for Effective Emergency Planning
- Contingency Planning and Continuity of Operations in the Military Health Care Arena.

2.1 Building a New Emergency Management Readiness Algorithm

Synopsis

This presentation provided an overview of a new focus and methodology that many emergency managers and response agencies are now using in their response plans since September 11, 2001.

Presenter Information

Michael P. Austin currently serves as the chair of NEMA's Readiness Committee and the chair of the Board of Visitors for the Emergency Management Institute in Emmitsburg, Maryland. Mr. Austin also serves as the Director of the Division of Emergency Management for the State of Arizona. This division is the lead state agency for the provision of direction and control of state emergency response operations during natural and technological disasters. The division is responsible for disaster recovery, disaster preparedness programs, emergency planning, hazard mitigation, and emergency management training for first responders.

Presentation Overview

This session reviewed how emergency management has changed since the September 11, 2001, terrorist attacks. Some of the topics addressed included the new threats to public safety, the pre- and post-September 11 planning approaches, emergency management systems versus emergency management plans, and related communications issues. Mr. Austin reported that one significant realization that had emerged was the fact that all disaster situations were "local" in nature. The communities around the impacted area must be prepared to respond effectively until additional local, regional, state, or federal resources can respond. The terrorist events of September 11 changed the manner in which first responders and emergency management officials reacted to emergencies as well as created new planning challenges that were never

contemplated previously. Mr. Austin said these changes had and would continue to require an increased focus for the states, emergency managers, and newly developed terrorism tasks forces.

According to Mr. Austin, terrorism now had a new definition—"political intimidation through violence or the threat of violence." This new definition also included new threats that were previously not contemplated by planners as possible or had been dismissed as "unfathomable." These potential terrorist threats included—

- Bombings
- Robberies
- Assassinations
- Hijackings/hostage taking
- Economic attacks
- Sabotage
- Chemical attacks
- Biological attacks
- Radiological attacks
- Cybernetic attacks.

Prior to the events of September 11, many emergency management agencies (EMA) based and planned their preparedness efforts on a variety of assumptions. Pre-September 11 plans assumed—

- Only known hazards or risks were a threat.
- The primarily threat came from natural disasters.
- The federal response and assistance would be sufficient.
- Catastrophic events were very unlikely.
- Directly affected citizens would survive for at least 3 days thus allowing additional time for response coordination.

These assumptions resulted in EMAs creating a vast array of specific response plans to specific types of contemplated emergency incidents. For example, the State of Arizona had plans dealing with everything from fires, flooding, and nuclear events, to grasshopper invasion events. However, Mr. Austin reported that subsequent to September 11, emergency managers and EMAs at all levels of government had been reviewing, reevaluating, and updating emergency response plans in order to respond effectively to the next incident. The previous assumptions were discarded and many plans now assumed—

- Incidents may include manmade as well as natural disasters.
- Events may begin as manmade incidents and become natural disasters.

- Events may be catastrophic.
- Incidents may involve suicide attacks against a variety of targets.
- Attacks may include secondary actions against response systems and personnel.
- Local response capabilities will be overwhelmed in a short time following the event.
- Secondary and support responses from other local, county, regional, and federal sources must be immediate.

According to Mr. Austin, for EMAs to accomplish these new responsibilities would require the adoption of emergency management systems that incorporate the four primary components of policy, planning, operations, and logistics. Such a system would need to be further subcategorized in terms of personnel, equipment, communications, supplies, and facilities. Furthermore, the emergency management system should be functionally-based instead of scenario-based as in the past. Mr. Austin stated that the State of Arizona had adopted an emergency management system that consisted of a variety of emergency support functions (ESF) that were based on core competencies of resource supplying agencies. He provided the following examples of six of the multitude of ESFs found in the State of Arizona emergency management system—

- ESF 1—Transportation Infrastructure
- ESF 2—Communications
- ESF 3—Public Works and Engineering
- ESF 4—Fire Services
- ESF 5—Direction and Control
- ESF 6—Mass Care.

Each of the ESFs defines particular requirements, resources, and expertise to support the function in the event of an emergency event. Each of the ESFs may be independently initiated based on the type and severity of the incident. In addition to the definitions of the ESFs, the system must also incorporate a continuity of operation (COOP) plan and a continuity of government (COG) plan in case assets of the EMA and/or the government are incapacitated.

In addition to a sound functional emergency management system, Mr. Austin stated that emergency management agencies must begin to reach out and include the private sector as part of the planning, support, and response process. The system must ensure interoperability with other regional and federal initiatives for disaster management and mitigation, as well as increase local agency capacities to initially respond and address an incident. The system must provide for community preparedness objectives, training curricula, and system exercises to ensure proper execution of the various ESFs. Furthermore, Mr. Austin asserted that the states and the Federal Government must define a common and consistent process for disaster declaration. Currently, when and why states approach the Federal Government for support and resources varies greatly.

It was acknowledged during the presentation and subsequent questioning that adequate communications was of the utmost importance in any emergency management system and that communications was routinely singled out as a critical point of failure in actual events and training exercises. Participants in the discussion viewed communications interoperability as an essential component of a functional emergency management system at any level of government but acknowledged that it was one of the most tenuous capabilities to achieve. Mr. Austin indicated that the communications ESF component in the State of Arizona system defined resources, capabilities, and methodologies to establish communications across jurisdictional boundaries for routine and ad hoc support during emergency management events.

Summary and Analysis

This session provided a thorough overview of the State of Arizona's ongoing efforts in the post September 11 environment and the strides made to update and enhance its emergency management system. Communications interoperability at all levels of government was acknowledged and recognized as an essential element for successful emergency management response, mitigation, and operations. The PSWN Program should remain vigilant in outreach efforts to the states and specifically to local, state, and federal EMAs during this time of refocus and new planning efforts.

2.2 Statewide Planning for Domestic Terrorism

Synopsis

The State of Iowa developed a comprehensive homeland security initiative that combines security management and emergency management roles within one agency. This presentation reviewed the four defined major mission areas—detection, protection, prevention, and response/recovery.

Presenter Information

David Hudson is an associate with the Rafferty Group based in West Des Moines, Iowa. The Rafferty Group is a consulting company that has developed strategic planning tools for the government and the nonprofit sector. Currently he is a senior advisor to the State of Iowa's Department of Public Defense.

Presentation Overview

This presentation addressed the State of Iowa's various Homeland Security initiatives. According to Mr. Hudson, one of the state's primary concerns was the likelihood of the next terrorist incident being one of agro-terrorism. This act might target animal, farm, or other agricultural production-related assets within the state. Like four other states, more than half of the State of Iowa's economy relies on agriculture. Also, the State of Iowa's agricultural output ranks third in the Nation. The state envisioned that an attack could have effects similar to the "mad cow" or "hoof and mouth" epidemics in Europe in recent years. Mr. Hudson asserted that an attack in "America's heartland" could eclipse the impact of the attacks on the World Trade

Center (WTC) and the Pentagon and have a potentially greater psychological effect on the American population.

In preparation for these potential threats and other possible terrorist actions, Mr. Hudson reported that the State of Iowa had drawn correlations with previous Year 2000 (Y2K) planning efforts and had modified and added to those methods to develop a comprehensive threat assessment. Mr. Hudson acknowledged that the uncertain environment surrounding the "War on Terror" had added additional challenges to the information collection activities. In many cases, private industry was reluctant to participate and provide details of private assets due to concerns of confidentiality.

Mr. Hudson stated that the nature of terrorism had two underlying themes—near-term threats and longer-term consequences. The near-term threats were identified as logical primary targets with high symbolic value such as—

- Commercial aviation
- Public surface transportation
- Critical infrastructure
- Diplomatic facilities
- Corporate symbols.

In addition, Iowa also identified several domestic terrorist threats related to—

- Animal rights groups
- Groups against the development of genetically modified organisms
- Anti-abortion groups
- White supremacists
- Cyber warfare.

Mr. Hudson said he believed that in the future we would experience coordinated multidimensional attacks (e.g., conventional, biological, radiological, and cyber). These attacks could achieve a cascading effect overloading the capacity to respond effectively. To combat and mitigate these and other threats, the Iowa Security and Emergency Management Plan identified critical state public assets and their vulnerabilities. This identification was accomplished through an inventory and assessment of more than 12,000 public and private assets. More than 1,000 assets were identified as critical and were catalogued in the following groups—

- Mass casualty risk
- Essential emergency response function
- Economic impact
- Key military installations
- Critical infrastructure (e.g., water, energy, communications, and information systems)
- COG
- Symbolic value.

Because the state was unable to protect more than 1,000 different assets, assets that could be protected by local agencies were removed from the list. The final list included approximately 400 assets. These highly critical assets were analyzed to determine how they were interrelated or dependent on each other. The assets were also assessed to determine how an interruption would impact upstream or downstream assets in a cascading or dependent action or event. From this information, the state developed specific progressive security measures for each of the identified vulnerable assets. The security measures were directly linked to the alert levels of the Homeland Security Advisory System (HSAS). Mr. Hudson stated that the state was contemplating a spending measure of up to $40 million to protect and mitigate the identified highly critical state assets.

Summary and Analysis

This session provided an overview of the State of Iowa's emergency and security management activities since October 2001. The state has progressed through an inventory and assessment of critical assets. Furthermore, the state developed a comprehensive and progressive security management and emergency management system for protection and recovery in the event of an attack. The session did not specifically delineate how communications systems or assets would be protected, used, or recovered in the event of incapacitation or destruction.

2.3 Disaster Assistance & Mitigation: Creating Safer, More Disaster Resilient Communities in Ontario

Synopsis

This session reviewed two emergency management events—the ice storm of 1998 and the Walkerton water contamination in May 2000 in Ontario, Canada. The session also discussed the lessons learned that led to significant changes in financial assistance programs and emergency mitigation policies.

Presenter Information

Diane McArthur-Rodgers is a Manager in the Emergency Management/Disaster Assistance, Ministry of Municipal Affairs and Housing, Toronto, Ontario, Canada. The Ministry of Municipal Affairs and Housing is the lead emergency response agency for financial assistance to municipalities, businesses, and private individuals.

Presentation Overview

This presentation provided information about two significant emergency management events in the Canadian province of Ontario. The first event was a damaging ice storm that affected a large portion of eastern Ontario on January 4, 1998. The storm crippled hydroelectric power in the region and left many without power and heat for an extended period. Business, commerce, and transportation systems were severely affected by the damage caused by the storm. Ontario had previously never experienced an event of this magnitude, and this was the only time that the provincial government ever sought federal assistance for disaster mitigation.

Ms. McArthur-Rodgers indicated that storm-related costs in Ontario (i.e., mitigation, cleanup, and individual loss claims) totaled over $600 million. Those costs included—

- Private insurance claims—$234 million
- Federal Government Disaster Assistance—$224 million
- Provincial Government Disaster Assistance—$34 million
- Ontario Hydro—$108 million (Transmission Infrastructure Repairs)
- Human Resources Canada—$21.8 million.

The second event was the accidental contamination of the fresh water supply of the City of Walkerton in May 2000. One of seven water supply wells was contaminated with deadly e-coli bacteria. This contamination was subsequently traced to water runoff from farming lands in proximity to the municipality. Seven people died due to consumption of the tainted water and more than 2,300 were hospitalized during the event, which represented approximately 77 percent of the Walkerton population.

The initial emergency management response was significantly subdued because this was considered a "classic cascading disaster"—there was no specific scene to respond to until the utility was identified as the causative factor. Most of the people who became ill transported themselves to local doctors, clinics, or hospitals while some of the more serious exposures required emergency medical services (EMS) intervention. Ms. McArthur-Rodgers indicated that the hospital's "surge capacity" was tested but once the bacteria were identified, the response of the provincial government was immediate.

According to Ms. McArthur-Rodgers, the Ministry of the Solicitor General was responsible for the coordination and provision of the emergency management response in a provincial emergency and the Municipal Affairs and Housing Ministry was responsible for coordinating the disaster financial programs. The response of the Municipal Affairs and Housing Ministry was considered to be substandard in both emergencies because the existing application, review, and expenditure mechanisms were insufficient to handle the task. The substandard response was mainly due to the sheer volume of claims made to the Ministry. These deficiencies led to a public inquiry during the Walkerton incident.

Both emergencies revealed the flaws in the financial assistance components of the disaster management programs in Ontario. Ms. McArthur-Rodgers reported that in response to the public inquiry, the provincial government was considering the following steps—

- Improving disaster assistance response
- Improving coordination among provincial ministries and agencies
- Improving overall preparedness for the next event
- Adopting a formal mitigation policy to make communities more disaster resistant.

Summary and Analysis

This session provided an overview of the Canadian province of Ontario's response to two significant and costly disasters. The presentation focused primarily on the difficulties experienced by the citizens applying for and receiving provincial and federal disaster assistance. The speaker and the presentation materials indicated that the actual field response to the incidents from the governments was timely and appropriate. However, the secondary components of monetary assistance to citizens from the governments were seriously overwhelmed by the magnitude of the disaster. Both the provincial and federal governments are implementing policy and administrative reforms.

2.4 Improving Collaboration: A Proven Measure for Effective Emergency Planning

Synopsis

This session reviewed Maricopa County, Arizona's approach to effective emergency management planning through the use of collaboration techniques.

Presenter Information

Robert Spencer has been the Director of the Maricopa County Department of Emergency Management since 1995. He is a Certified Emergency Manager through the International Emergency Manager's Association (IEMA).

Presentation Overview

Mr. Spencer began his presentation by explaining the importance of effective collaboration in emergency management planning. Collaboration was especially important in Maricopa County because of its unique composition. In addition to being the largest metropolitan area in Arizona and the sixth largest in the United States, the county presents the following demographics—

- 9,226 square miles
- 3,100,000 (legal) residents
- 24 incorporated cities and towns
- 32 city-like unincorporated areas
- 31 fire suppression agencies
- 22 law enforcement agencies
- 3,188 hazardous materials (HAZMAT) facilities with 3,978 sites
- 30 major dams.

Additionally, the area experiences a yearly monsoon season creating torrential rainfall and flash flooding. The area also supports several military installations and the largest nuclear generating facility in North America. All of these elements translate into hundreds of "potential threat elements" for natural and manmade disasters.

According to Mr. Spencer, the county must reach out, solicit, and encourage collaboration and participation of various stakeholders. In order to do this, the department used the following collaboration techniques—

- Spending time considering who must be involved in the process
- Using experts in their fields for support and information
- Finding and using adequate, comfortable meeting spaces
- Sending formal invitations well in advance of meetings
- Providing materials before meetings
- Dressing for the audience
- Keeping adequate records of who was invited and participated
- Providing food
- Establishing agendas and abiding by them
- Having a recorder and keeping accurate minutes
- Allowing the flow of ideas and facilitating "brainstorming sessions"
- Asking and responding to a multitude of questions
- Using subcommittees that will bring work back to the entire group
- Scheduling follow-up meetings early
- Setting and adhering to deadlines.

By using the above techniques, the emergency management department was able to form a collaborative partnership and formulate a comprehensive emergency management system to support the county and all the participating entities. Some positive hidden byproducts were also identified through these collaborative efforts. These byproducts included—

- Knowing your partners minimizes friction—Kumbaya effect

- Working together during a real emergency is easier when you can put a face to a name or position

- Learning where people, resources, and places are located

- Working together to meet a common objective.

However, Mr. Spencer indicated these efforts were accomplished with a degree of difficulty. Most of this difficulty came from a lack of trust or issues regarding agencies' perception of invasion of their "turf." According to Mr. Spencer, the turf issues would fade and the degree of trust in one another would increase.

The collaborative planning efforts in Maricopa County were very successful. He pointed out the following planning group successes—

- Arizona Terrorism Task Force
- Metropolitan Medical Response System
- Utility Partners

- Public Works Agency Collaboration Teams
- Unified Command Group
- Phoenix Area Automated Aid Consortium
- Geographic Information Systems
- Department of Justice Assessment and Grants Distribution
- Palo Verde Nuclear Generating Station Emergency Response Plan
- Rolling Blackout Planning Group.

Summary and Analysis

This presentation reviewed the successful collaboration techniques used by the Maricopa County Emergency Management Department to establish partnerships with area agencies. These techniques were used to facilitate cooperative efforts for emergency management as well as other interagency cooperation situations. Several key problems and specific impediments were identified as significant problems that must be addressed and overcome for the collaborative efforts to proceed. The county's methodology and its planning processes are markedly successful.

2.5 Contingency Planning and Continuity of Operations in the Military Health Care Arena

Synopsis

This session reviewed the disaster recovery and emergency response strategy of the United States Military Medical Response Units and the support opportunities provided to military and civilian entities.

Presenter Information

Linda Fines has been active in the emergency response and disaster recovery field for the past 15 years. Ms. Fines formulated and executed automated information systems (AIS) architecture plans and disaster recovery procedures for the Federal Aviation Administration (FAA) and the Department of State. Currently, Ms. Fines provides support to the Office of the Air Force Surgeon General Medical Information Systems Division (AF/SGMI) with technical oversight and policy guidance for information systems architecture, security, and risk management.

Presentation Overview

Ms. Fines began her presentation by discussing the role of National Disaster Medical System (NDMS) units and the support they provide to local, state, and federal agencies in times of disasters. Several of these units were pressed into service on September 11 following the attacks at the WTC. A Navy NDMS unit was deployed at the front gate of a nearby military installation and provided triage and medical assistance for the "walking wounded" from the WTC. Subsequent to the events of September 11, the NDMS units initiated additional outreach

efforts to support National Guard civil support team responses as well as local EMS and HAZMAT teams.

Ms. Fines said the NDMS operated through plans originally developed from various successful Y2K information system mitigation efforts. This successful strategy allowed the Tri-Care agency (i.e., Army, Navy, and Air Force Medical Units) to evaluate, mitigate, and test 103 automated information systems worldwide for date conversion anomalies. Thirteen of these systems were consider mission-critical systems. These efforts included interfaces with other defense systems, reporting systems, vendor systems, and other Tri-Care managed support systems. Additionally, more than 100,000 biotechnology devices and various support structures such as utilities, life support elements, and health and welfare agencies also required evaluation, mitigation, and testing.

Subsequent to the assessment of the information systems, supporting structures, and providers, contingency plans and COOP plans were developed. Contingency plans account for information systems, biotechnology systems, and facilities. COOP plans account for automated systems and hospital systems. These plans, in conjunction with the initial assessment, were developed into a readiness Assessment Master Plan that included—

- Interface agreements between military health, managed care, and veterans affairs systems
- Contingency plans
- COOP plans
- End-to-end testing plans.

Summary and Analysis

This presentation provided examples of how the world's largest health care providers' information systems and functional management have facilitated a preparedness and recovery strategy. The presentation was a discussion of high-level strategic elements and plans and did not concentrate on operational efforts or identify specifics regarding communications resources.

3. DAY TWO

On the second day of the conference, PSWN Program support staff attended the following sessions—

- New York City Challenges in Information Technology and Telecommunications Post 9-11: Using Agency Partnerships to Get Results
- Reinventing the Relationship Between Emergency Management and the National Weather Service
- Emergency Management in Illinois: Coordinating Across Federal, State, and Local Agencies to Respond and Recover
- How to Approach Disaster Management Cost Effectively Before Disaster Strikes
- Disaster Preparation on the State Level: Maximizing Your Resources.

3.1 New York City Challenges in Information Technology and Telecommunications Post 9-11: Using Agency Partnerships to Get Results

Synopsis

The events of September 11 had a major impact on New York City's telecommunications infrastructure in the Civic Center area. This presentation addressed how the Department of Information Technology and Telecommunications restored critical information and communications systems using proper pre-planning and effective cross-agency relationships.

Presenter Information

Avi Duvdevani currently serves as the New York City's Department of Information and Telecommunications' (DoITT) First Deputy Commissioner.

Presentation Overview

The session provided an overview of the destruction that occurred at the WTC as a result of the terrorist attacks and the response of the City of New York to the event. Mr. Duvdevani provided the following information regarding New York City—

- More than 8 million people reside in the city, which is more than the total population in 39 other states.
- More than 3 million people commute into the city each day.
- New York's operating budget is $39.4 billion, making it the fourth largest government budget in the United States.

- Thirty-eight city agencies employ 350,000 city employees in 2,500 locations directly accountable to the Mayor.

- If it were an independent nation, New York City would have the 16th highest gross national product in the world ($375 billion yearly).

The attacks severely impacted operations of the city and the DoITT. The DoITT administrative offices were housed in the WTC at 75 Park Place. In addition, seven WTC housed the City of New York's Primary Emergency Operations Center (EOC) on the 23rd floor. This center was very robust, state-of-the-art, and well organized for emergency management operations. Seven WTC was severely damaged when the north and south towers collapsed, which resulted in an uncontrollable diesel fuel fire. This fuel was used to power the EOC's emergency generators. Seven WTC was evacuated and collapsed on the evening of September 11.

After several interim steps to establish temporary EOCs, the city began constructing a more permanent facility at Pier 92, which is close to the disaster site. This site only took 32 hours to build and was in complete operation within 72 hours of the original attack. More than 100 government, private, and non-profit agencies staffed the EOC on a 24-hour basis. Additionally, a family assistance center was set up within 24 hours of the attack and took only 48 hour to build. A permanent family assistance site was established within 1 week. Within 24 hours, the DoITT had accumulated more than 1,000 computers, cellular telephones, portable and mobile radios, fax machines, and networking equipment. Cisco Systems and Motorola came to the aid of the city by shipping in vast quantities of equipment over a short period of time.

The DoITT also approached the Federal Bankruptcy Court in New York to gain access to the abandoned assets of the Metricom Ricochet network. The court allowed the city's use of the network, and it was placed into service to provide wireless Internet and intranet access within the disaster zone and to other areas that were without data communications services. Blackberry paging was also used heavily to transmit text messages.

Mr. Duvdevani explained that in addition to supporting the EOC efforts, the DoITT had many additional challenges to maintain COOP throughout the city. Some of those challenges included—

- Restoration of voice and data services to thousands of telephones and computers in city government agencies. Verizon, the local telephone carrier, experienced partial destruction of a central office and major damage to a cable plant that supported the majority of the city's telecom infrastructure.

- Migration of the city's entire Web site to a contingency connection.

- Prioritization and restoration of mission-critical information system applications.

- Establishment of an Emergency Global Information System (GIS) Data and Mapping Center to support search and recovery operations at Ground Zero.

Mr. Duvdevani credited the Mutual Aid and Restoration Consortium (MARC) and previously used Y2K scenarios and contingency plans for the expedient and uniform manner in which the city was able to respond to the disaster. MARC is a consortium of major Telco carriers created by a public–private task force in the early 1990s to plan for cooperative resumption of voice and data services in a catastrophic situation.

Mr. Duvdevani provided the following lessons learned from the September 11, 2001, events—

- A truly comprehensive recovery plan is needed that considers human and physical factors as well as operations, communications, technology, and business and worker relocation.
- A focus beyond IT infrastructure is needed to relocation and work resumption of business users who rely on IT infrastructure.
- Critical IT infrastructure components must be diversified and replicated.
- The Y2K plan (e.g., redundancy, hot standby sites, and equipment warehousing) made a significant difference in the restoration.
- A solid combination of voice-over-Internet Protocol (VoIP), wireless, and private branch exchange (PBX) communications is critical to ensure quick recovery.

Summary and Analysis

The presenter provided a comprehensive overview of the challenges facing the City of New York and the DoITT in response to the attacks at the WTC. The events eclipsed much of the previously accomplished pre-planning efforts, but these plans provided a sound structure for emergency management and mitigation. Additionally, diversified communications resources and previous agreements with private vendors are of paramount importance in the recovery efforts. Wireless communications played a significant role in recovery efforts by reestablishing voice and data connectivity.

3.2 Reinventing the Relationship Between Emergency Management and the National Weather Service

Synopsis

This session addressed an ongoing paradigm shift in the relationship of the National Weather Service (NWS) and EMAs.

Presenter Information

Lans Rothfusz is a Meteorologist in Charge of the NWS forecast office in Peachtree, Georgia. He has also served the NWS, in Chattanooga, Tennessee, Oklahoma City, Oklahoma, and Fort Worth, Texas.

Presentation Overview

This session reviewed the long-time association between the NWS and local, state, and federal EMAs. This relationship is credited with saving countless lives and drastically reducing weather-related property damage. According to Mr. Rothfusz, continuing advances in science and weather prediction technologies produced significant gains in lead time and the reliability of NWS weather and hydrologic warnings over the past few years. Additionally, some recent significant events suggested that further positive changes could come from reinventing the relationship between the NWS and EMAs.

Mr. Rothfusz stated that he existing system of a linear relationship with emergency managers and EMAs was poised to change, and a new "holistic" relationship paradigm would be offered as a better alternative. This new paradigm would result in a more effective use of the NWS products and services. The new paradigm for NWS was based on the NWS' successful StormReady program that formally recognized communities that were well prepared for severe weather events.

Mr. Rothfusz described the StormReady Program as a jointly administered with state and local emergency managers striving to ensure that communities are well prepared for severe weather events. The StormReady program incorporated the following criteria—

- Communications
- NWS warning reception
- Meteorological data monitoring
- Warning dissemination
- Community preparedness
- Administrative oversight.

The benefits of participation in the StormReady program, according to Mr. Rothfusz, included improved emergency management programs, safer communities, as well as an improved relationship between EMAs and the NWS. Other benefits included a positive public image for the EMAs and the NWS.

Summary and Analysis

The presentation described a new initiative within the NWS to improve its relationship with EMAs and to project a better public image. The adoption of the new StormReady Program allows local, state, and federal entities to improve their use of NWS products and services and enhance the weather safety of their constituents.

3.3 Emergency Management in Illinois: Coordinating Across Federal, State, and Local Agencies to Respond and Recover

Synopsis

This session reviewed how the Illinois Emergency Management Agency (IEMA) coordinates the state's disaster preparedness, mitigation, response, and recovery activities with local, state, and federal governments and private organizations.

Presenter Information

Richard Jaehne is the Director of the Illinois Fire Service Institute.

Presentation Overview

This session discussed the State of Illinois response to the terrorist attacks of September 11 and the subsequent planning efforts to reinforce the state's emergency management efforts. Mr. Jaehne stated that the State Emergency Operations Center (SEOC) was activated within 15 minutes of the first attack, and the first briefing to elected officials and SEOC members was completed within 45 minutes. The SEOC was in operation 24 hours a day for 8 days following the attacks.

The State of Illinois implemented a comprehensive regional response strategy in several phases. This strategy upgraded HAZMAT teams and completed equipment acquisitions for the State Interagency Response Teams (SIRT) and the Illinois Mobile Emergency Response Teams (IMERT). Additionally, the strategy facilitated the inclusion of the Illinois National Guard Civil Support Teams (INGCST) and defined the use of the Emergency Management Assistance Compact (EMAC) and resources from the Federal Emergency Management Agency (FEMA). The SEOC has five levels of response—

- First Responders—The updated training provided to first responders included terrorism information. More than 19,000 emergency personnel trained in the past 17 months, and more than 184,000 hours of training completed.

- Mutual Aid—The state defined and equipped three mutual aid Weapons of Mass Destruction (WMD) response teams. The state planned the response of the teams on a mutual aid fire box assignment system (MABAS). These teams are geographical positioned, and the state is split into three geographic divisions.

- SIRT/IMERT—Similar to the WMD response teams, the SIRTs are geographical positioned. The SIRTs include—

  - Illinois State Police Tactical Response Teams
  - Illinois Environmental Protection Agency
  - Illinois Department of Nuclear Safety
  - Illinois Department of Health

- Illinois Secretary of State Police
- Office of the State Fire Marshal
- Illinois Emergency Management Agency
- Local Fire Service Experts.

The IMERTs include personnel from the Illinois Department of Public Health and local doctors and nurses. Four IMERTs are assigned to specific geographic divisions in the state.

- INGCST—The INGCST consist of 22 full-time Army and Air National Guard members who are available 24 hours a day, 7 days a week. The INGCST can provide—

  - Nuclear, biological, chemical (NBC), and radiological reconnaissance and survey
  - NBC sample collection
  - Laboratory analysis of NBC samples
  - Nuclear, biological, chemical, and radiological (NBCR) agent research/reach-back to subject matter experts
  - Communications connectivity (i.e., voice, data, and imagery)
  - Still and video imagery
  - Limited decontamination and medical support.

- EMAC/FEMA—This compact provides mutual aid agreements that allow other states to assist one another. FEMA supplies federal resources for disaster responses.

The second phase for emergency management processes in the State of Illinois would encompass statewide communications improvements. This effort would facilitate improved interoperable communications through the STARCOM system during emergency management incidents. Additionally, phase two called for an online emergency response system.

Summary and Analysis

This session provided a thorough review of the State of Illinois' strategies and resources developed to evaluate, respond, and mitigate emergency management incidents. The new Homeland Security grant initiatives are anticipated to provide funding support for the statewide communications improvements.

3.4 How to Approach Disaster Management Cost Effectively Before Disaster Strikes

Synopsis

This session addressed simple and effective ways to develop hospital disaster plans, which will maximize capabilities without astronomical cost.

Presenter Information

Dr. William Chung is a board certified emergency physician currently working as a Senior Staff Physician in the Department of Emergency Medicine at Henry Ford Hospital (HFH) in Detroit, Michigan. Dr. Chung serves as the EMS coordinator for HFH and as a medical officer for the Michigan Disaster Management Assistance Team (DMAT).

Dr. Robert Dunne is an Emergency Medicine Physician at Sinai Grace Hospital in Detroit, Michigan, as well as an Associate Residency Director and Assistant Professor at Wayne State University. Dr. Dunne is a senior medical officer for the DMAT.

Presentation Overview

This presentation discussed hospital disaster planning and response to emergency management incidents and the importance of establishing community partnership. The presenters stated the following goals for hospital disaster plans—

- Do the most good for the most people
- Reduce injury and prevent disease
- Care for current patients
- Develop community partnership.

Dr. Chung indicated that in many cases it is difficult to maintain interest in hospital disaster planning because "interest in disaster preparedness is proportional to how recent and how severe the last disaster was." He defined disaster as, "Any incident that overwhelms available resources."

Dr. Dunne stated that categorization was important in disaster planning and response—

- Internal versus external facility incident
- Natural versus manmade incident
- Intentional versus accidental.

If an incident was properly categorized, then the response was more appropriate to mitigate the incident. The presenters pointed that this categorization was crucial in a hospital environment, due to the complexities of ongoing patient care and the difficulties in evacuating or moving non-ambulatory patients in a short period of time. The categorization also helped to define the parameters of the incident and indicate a realistic and safe response.

Dr. Chang and Dr. Dunne then presented information regarding several high-profile emergency management incidents and some of the challenges that were presented to the affected hospitals. For example, the Tokyo Subway Attack in 1995 occurred due to the simultaneous release of binary sarin gas on six different subway trains. The resulting "hospital affect" was—

- 5,500 symptomatic patients
- 1,000 people hospitalized
- 12 deaths
- 132 first responders overcome and requiring treatment.

An important fact to recognize is that 84 percent of the patients arrived at the affected hospitals by private conveyance and not through EMS. Additionally, the primary hospital received more than 500 patients in less than 1 hour from the original attack. In this case, the emergency department was a first responder.

Many hospitals currently implement Incident Command Systems (ICS) similar to those put in place by law enforcement and fire agencies. The hospital ICS defines personnel responsibilities, directions of patients and others, and supply inventories assessments. The ICS also established a triage point, landing zones, transport areas, staging points and a morgue. Adequate two-way inter- and intra-hospital communications was identified as also very important.

Summary and Analysis

Appropriate emergency response plans must include area public safety agencies and the primary and secondary transport hospitals. The appropriate entities must exercise and practice the plans both individually and collectively. The plans must be kept up-to-date and at a minimum reviewed annually. As state interoperability assistance efforts continue, the PSWN Program should ensure that the medical community is included in assessment efforts and plans for interoperable communications systems.

3.5 Disaster Preparation on the State Level: Maximizing Your Resources

This session reviewed the State of Georgia Emergency Management Agency's (GEMA) emergency operation plan.

Presenter Information

Gary W. McConnell is the State of Georgia's Emergency Management director. Mr. McConnell was appointed to the position in 1991. Since becoming Director, McConnell has coordinated emergency response and recovery efforts in all but five Georgia counties that have received Presidential Disaster Declarations. While severe weather is a major focus of GEMA, McConnell has drastically expanded GEMA's role as the state's lead emergency preparedness agency to include domestic terrorism and weapons of mass destruction.

Presentation Overview

This session discussed the State of Georgia's response to the terrorist attacks of September 11. GEMA activated the State Operations Center (SOC) less than 2 hours after first attack to prepare for any further incidents and reassure an anxious public.

According to McConnell, the State of Georgia was no stranger to terrorist attacks. The Olympic Games in Atlanta were a target in 1996 as was an abortion clinic and a nightclub in the Atlanta area. GEMA had also responded to 16 large-scale natural disasters since 1990, including deadly tornadoes and major floods that inflicted more than $1 billion in damage. Additionally, GEMA assisted in the largest peacetime evacuation of more than 3 million people in preparation for Hurricane Floyd. Mr. McConnell reported that with each of these incidents, GEMA improved its planning, training, equipment and communications capabilities.

In January 1999, GEMA created the weapons of mass destruction working group to ensure adequate response and recovery from a large-scale terrorist attack. The plan addressed—

- Continuation of services
- Succession of government
- Identification of critical services and workforce
- Protection and continuation of financial operations
- Identification of alternative work locations
- Intelligence dissemination and communications
- Threat and target analysis
- Target hardening
- Refinement of existing plans and procedures
- Training and education of new issues where appropriate.

Mr. McConnell reported that the State of Georgia had also established the Georgia Information Sharing and Analysis Center (GISAC), an intelligence gathering and analysis entity. The center is responsible for collecting, evaluating, and disseminating intelligence and threat information to all levels of law enforcement within the state.

Summary and Analysis

This session provided a thorough review of the State of Georgia's efforts to evaluate, respond, and mitigate emergency management incidents. These efforts may gain support from the new Homeland Security grant initiatives and may benefit from PSWN Program assistance.